

In the claims:

1. (previously presented) A photonic switching system comprising:

demultiplexing logic for demultiplexing optical data streams from a plurality of incoming fibers;

dropping/passing logic operably coupled to the demultiplexing logic for receiving the demultiplexed optical data streams from the demultiplexing logic and configured to only selectively drop or pass each demultiplexed optical data stream to an output of the dropping/passing logic;

photonic switching logic operably coupled to the dropping/passing logic for receiving the passed optical data streams from the dropping/passing logic and switching each passed optical data stream to an output port of the photonic switching logic; and

combining logic operably coupled to combine the switched optical data streams from the photonic switching logic with a number of new optical data streams to form a plurality of outgoing optical signals.

2. (original) The photonic switching system of claim 1, wherein the demultiplexing logic comprises a plurality of demultiplexers, each demultiplexer couplable to an incoming fiber for demultiplexing optical data streams from the incoming fiber.

3. (previously presented) The photonic switching system of claim 1, wherein the dropping/passing logic comprises a plurality of drop-only fabrics, each drop-only fabric operably coupled to receive a plurality of demultiplexed optical data streams from the demultiplexing logic and only selectively drop or pass each demultiplexed optical data stream

to the output of the dropping/passing logic without adding new optical data streams.

4. (original) The photonic switching system of claim 1, wherein the combining logic comprises a plurality of combiners, each combiner operably coupled to combine a plurality of switched optical data streams from the photonic cross-connect switch with a number of new optical data streams to form an outgoing optical signal.

5. (original) The photonic switching system of claim 1, wherein the combining logic comprises:

first combiners, each of said first combiners operably coupled to combine a plurality of switched optical data streams from the photonic cross-connect switch to form a combined optical signal; and

second combiners, each of said second combiners operably coupled to combine the combined optical signal from a corresponding first combiner with a number of new optical data streams to form an outgoing optical signal.

6. (previously presented) A photonic switching apparatus comprising:

demultiplexing logic for demultiplexing optical data streams from a plurality of incoming fibers;

dropping/passing logic operably coupled to the demultiplexing logic for receiving the demultiplexed optical data streams from the demultiplexing logic and configured to only either selectively drop or pass each demultiplexed optical data stream to an output of the dropping/passing logic;

photonic switching logic operably coupled to the dropping/passing logic for receiving the passed optical data streams from the dropping/passing logic and switching each passed optical data stream to an output port of the photonic switching logic; and

combining logic operably coupled to combine the switched optical data streams from the photonic switching logic with a number of new optical data streams to form a plurality of outgoing optical signals.

7. (original) The photonic switching apparatus of claim 6, wherein the demultiplexing logic comprises a plurality of demultiplexers, each demultiplexer couplable to an incoming fiber for demultiplexing optical data streams from the incoming fiber.

8. (previously presented) The photonic switching apparatus of claim 6, wherein the dropping/passing logic comprises a plurality of drop-only fabrics, each drop-only fabric operably coupled to receive a plurality of demultiplexed optical data streams from the demultiplexing logic and only selectively drop or pass each demultiplexed optical data stream to the output of the dropping/passing logic without.

9. (original) The photonic switching apparatus of claim 6, wherein the combining logic comprises a plurality of combiners, each combiner operably coupled to combine a plurality of switched optical data streams from the photonic cross-connect switch with a number of new optical data streams to form an outgoing optical signal.

10. (original) The photonic switching apparatus of claim 6, wherein the combining logic comprises:

first combiners, each of said first combiners operably coupled to combine a plurality of switched optical data streams from the photonic cross-connect switch to form a combined optical signal; and

second combiners, each of said second combiners operably coupled to combine the combined optical signal from a corresponding first combiner with a number of new optical data streams to form an outgoing optical signal.

11. (previously presented) A photonic switching system comprising:

demultiplexing logic for demultiplexing optical data streams from a plurality of incoming fibers;

dropping/passing logic operably coupled to the demultiplexing logic for receiving the demultiplexed optical data streams from the demultiplexing logic and configured to only selectively drop or pass each demultiplexed optical data stream to an output of the dropping/passing logic;

photonic switching logic operably coupled to receive the passed optical data streams from the dropping/passing logic and a number of new optical data streams and to switch each of said optical data streams to an output port of the photonic switching logic; and combining logic operably coupled to combine the switched optical data streams from the photonic switching logic to form a plurality of outgoing optical signals.

12. (original) The photonic switching system of claim 11, wherein the demultiplexing logic

comprises a plurality of demultiplexers, each demultiplexer couplable to an incoming fiber for demultiplexing optical data streams from the incoming fiber.

13. (previously presented) The photonic switching system of claim 11, wherein the dropping/passing logic comprises a plurality of drop-only fabrics, each drop-only fabric operably coupled to receive a plurality of demultiplexed optical data streams from the demultiplexing logic and to only selectively drop or pass each demultiplexed optical data stream without adding additional optical data streams.

14. (original) The photonic switching system of claim 11, wherein the combining logic comprises a plurality of combiners, each combiner operably coupled to combine a plurality of switched optical data streams from the photonic cross-connect switch to form an outgoing optical signal.

15. (previously presented) A photonic switching apparatus comprising:

demultiplexing logic for demultiplexing optical data streams from a plurality of incoming fibers;

dropping/passing logic operably coupled to the demultiplexing logic for receiving the demultiplexed optical data streams from the demultiplexing logic and configured to only selectively drop or pass each demultiplexed optical data stream to an output of the dropping/passing logic;

photonic switching logic operably coupled to receive the passed optical data streams from the dropping/passing logic and a number of new optical data streams and to switch each of said optical data streams to an output port of the photonic switching logic; and

combining logic operably coupled to combine the switched optical data streams from the photonic switching logic to form a plurality of outgoing optical signals.

16. (original) The photonic switching apparatus of claim 15, wherein the demultiplexing logic comprises a plurality of demultiplexers, each demultiplexer couplable to an incoming fiber for demultiplexing optical data streams from the incoming fiber.

17. (previously presented) The photonic switching apparatus of claim 15, wherein the dropping/passing logic comprises a plurality of drop-only fabrics, each drop-only fabric operably coupled to receive a plurality of demultiplexed optical data streams from the demultiplexing logic and to only selectively drop or pass each demultiplexed optical data stream to the output of the dropping/passing logic without adding additional optical data streams.

18. (original) The photonic switching apparatus of claim 15, wherein the combining logic comprises a plurality of combiners, each combiner operably coupled to combine a plurality of switched optical data streams from the photonic cross-connect switch to form an outgoing optical signal.